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--The invention relates to transgenic non-human animals capable of producing high affinity human sequence antibodies. The invention is also directed to human sequence antibodies specific for human antigens, such as, human CD4. The invention also is directed to methods for producing human sequence antibodies.--

On page 251, line 6, in the left-hand column header of Table 20, delete "human" and replace with --anti-CD4-- .

On page 252, line 35, delete "or" and replace with --and one functional-- .

In The Claims:

Please amend the claims to read as follows:

10. (Amended) A transformed cell comprising [at least one artificial gene] a nucleic acid encoding at least a portion of [an] a human sequence immunoglobulin polypeptide,

wherein the human sequence immunoglobulin polypeptide specifically binds a human antigen,

wherein the cell produces a detectable amount of [an] the immunoglobulin [that binds a predetermined human antigen],

and wherein the immunoglobulin polypeptide has substantially the same sequence as an immunoglobulin polypeptide secreted by a hybridoma obtained from a transgenic mouse, said mouse comprising a homozygous pair of functionally disrupted endogenous heavy chain alleles, a homozygous pair of functionally disrupted endogenous light chain alleles, at least one copy of a human immunoglobulin light chain transgene, and at least one copy of a human immunoglobulin heavy chain transgene].

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11. (Amended) The [A] transformed cell of claim 10, wherein the cell is a eukaryotic cell.

12. (Amended) The transformed cell of claim 10, [11] wherein the human sequence immunoglobulin binds human CD4 or an antigenic fragment thereof.

13. (Amended) A [An] human sequence immunoglobulin that specifically binds human CD4 or antigenic fragment thereof, wherein said immunoglobulin comprises a human sequence light chain or human sequence heavy chain variable region and having similar affinity to a human CD4, or antigenic fragment thereof, as a human sequence immunoglobulin comprising a variable region comprising an amino acid sequence [substantially identical to an amino acid sequence] encoded by a nucleic acid with a sequence as set forth in [Seq. I.D. No. 1, Seq. I.D. No. 2, Seq. I.D. No. 3, Seq. I.D. No. 4, Seq. I.D. No. 5, Seq. I.D. No. 6, Seq. I.D. No. 7, Seq. I.D. No. 8, Seq. I.D. No. 9, or Seq. I.D., No. 10] SEQ ID NO:1, . SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8, SEQ ID NO:9, or SEQ ID NO:10.

14. (Amended) The human sequence immunoglobulin of claim 13 wherein the immunoglobulin comprises [the] an amino acid sequence as set forth in SEQ ID NO:61 or SEQ ID NO:62 [of Seq. I.D. No. 61 or Seq. I.D. No. 62].

18. A human anti-CD4 immunoglobulin that specifically binds CD4 from humans and specifically binds CD4 from at least one non-human primate.

22. (Amended) A human sequence immunoglobulin comprising a VH4-34 segment, a DXP'1 segment, a JH4 segment, and a heavy chain CDR3 region comprising the sequence DITMVRGPH (SEQ ID NO:63) [Seq. I.D. No. 63].

23. (Amended) A human sequence immunoglobulin comprising a VH5-51 segment, a DHQ52 segment, a JH2 segment, and a heavy chain CDR3 region comprising the sequence PANWNWYFVL (SEQ ID NO:64) [Seq. I.D. No. 64].

24. (Amended) A human sequence immunoglobulin comprising a VH4-34 segment, a JH5 segment, and a heavy chain CDR3 region comprising the sequence VINWFDP (SEQ ID NO:65) [Seq. I.D. No. 65].

25. (Amended) A human sequence immunoglobulin comprising a VH5-51 segment, a DHQ52 segment, a JH4 segment , and a heavy chain CDR3 region comprising the sequence DQLGLFDY (SEQ ID NO:66) [Seq. I.D. No. 66].

26. (Amended) A human sequence immunoglobulin comprising a VkA27/A11 segment, a Jk4 segment, and a light chain CDR3 region comprising the sequence QQYGSSPLT (SEQ ID NO:67) [Seq. I.D. No. 67].

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27. (Amended) A human sequence immunoglobulin comprising a VkL18 segment, a Jk4 segment, and a light chain CDR3 region comprising the sequence QQFISYPQLT (SEQ ID NO:68) [Seq. I.D. No. 68].

28. (Amended) A human sequence immunoglobulin comprising a VkL19 segment, a Jk2 segment, and a light chain CDR3 region comprising the sequence QQANSFPYT (SEQ ID NO:69) [Seq. I.D. No. 69].

29. (Amended) A human sequence immunoglobulin comprising a VkL15 segment, a Jk2 segment, and a light chain CDR3 region comprising the sequence QQYDSYPYT (SEQ ID NO:70) [Seq. I.D. No. 70].

30. (Amended) A hybridoma secreting [an] a human sequence immunoglobulin, wherein the immunoglobulin is selected from the group consisting of:

a human sequence immunoglobulin comprising a VH4-34 segment, a DXP'1 segment, a JH4 segment, and a heavy chain CDR3 region comprising the sequence DITMVRGPH (SEQ ID NO:63) [Seq. I.D. No. 63],

a human sequence immunoglobulin comprising a VH5-51 segment, a DHQ52 segment, a JH2 segment, and a heavy chain CDR3 region comprising the sequence PANWNWYFVL (SEQ ID NO:64) [Seq. I.D. No. 64],

a human sequence immunoglobulin comprising a VH4-34 segment, a JH5 segment, and a heavy chain CDR3 region comprising the sequence VINWFDP (SEQ ID NO:65) [Seq. I.D. No. 65],

a human sequence immunoglobulin comprising a VH5-51 segment, a DHQ52 segment, a JH4 segment , and a heavy chain CDR3 region comprising the sequence DQLGLFDY (SEQ ID NO:66) [Seq. ID. No. 66],

a human sequence immunoglobulin comprising a VkA27/A11 segment, a Jk4 segment, and a light chain CDR3 region comprising the sequence QQYGSSPLT (SEQ ID NO:67) [Seq. I.D. No. 67],

a human sequence immunoglobulin comprising a VkL18 segment, a Jk4 segment, and a light chain CDR3 region comprising the sequence QQFISYPQLT (SEQ ID NO:68) [Seq. I.D. No. 68],

a human sequence immunoglobulin comprising a VkL19 segment, a Jk2 segment, and a light chain CDR3 region comprising the sequence QQANSFPYT (SEQ ID NO:69) [Seq. I.D. No. 69], and

a human sequence immunoglobulin comprising a VkL15 segment, a Jk2 segment, and a light chain CDR3 region comprising the sequence QQYDSYPYT (SEQ ID NO:70) [Seq. I.D. No. 70].

Please add the following new claims:

31. (NEW) An isolated human sequence immunoglobulin which binds to human CD4 or antigenic fragment thereof with a K_a affinity of at least about 10^8 M^{-1}.

32. (NEW) The isolated human sequence immunoglobulin of claim 31, where the K_a affinity is at least about 10^9 M^{-1}.

33. (NEW) The isolated human sequence immunoglobulin of claim 31, where the immunoglobulin is a human sequence monoclonal antibody.

34. (NEW) The isolated human sequence immunoglobulin of claim 33, where the human sequence monoclonal antibody is produced by a hybridoma made by fusing an immortal cell with a lymphocyte isolated from a transgenic mouse.

35. (NEW) The isolated human sequence immunoglobulin of claim 34, where the hybridoma is selected from the group consisting of 1E11.15, 6C1.10, 1G1.9, 6G5.1, 10C5.6, 2E4.2, 4D1.4, 7G2.2 1F8.2 and 1G2.10.

36. (NEW) The isolated human sequence immunoglobulin of claim 31, where the immunoglobulin is expressed from nucleic acid sequence initially isolated from a lymphocyte from a transgenic mouse.

37. (NEW) An isolated human sequence immunoglobulin that specifically binds human CD4 or antigenic fragment thereof comprising a human sequence immunoglobulin light chain polypeptide having a VJ junction comprising a nucleic acid sequence selected from the group consisting of SEQ ID NO:2, SEQ ID NO:4, SEQ ID NO:6, SEQ ID NO:8, and SEQ ID NO:10.

38. (NEW) The isolated human sequence immunoglobulin of claim 37, wherein the immunoglobulin binds to a human CD4 or antigenic fragment thereof with a K_a affinity of at least about 10^8 M^{-1}.

39. (NEW) The isolated human sequence immunoglobulin of claim 38, where the K_a affinity is at least about 10^9 M^{-1}.

40. (NEW) An isolated human sequence immunoglobulin that specifically binds human CD4 or an antigenic fragment thereof comprising a human sequence immunoglobulin heavy chain polypeptide having a VDJ junction comprising a nucleic acid sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO:3, SEQ ID NO:5, SEQ ID NO:7, and SEQ ID NO:9.

41. (NEW) An isolated or transformed cell comprising a human sequence immunoglobulin which binds to an antigen with a K_a affinity of at least about 10^8 M^{-1}.

42. (NEW) The cell of claim 41, wherein the K_a affinity is at least about 10^9 M^{-1}.

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43. (NEW) The cell of claim 41, wherein the antigen is a human antigen.

44. (NEW) The cell of claim 41, wherein the antigen is CD4 or an antigenic fragment thereof.

45. (NEW) The cell of claim 41, wherein the cell is a mouse cell.

46. (NEW) The transformed cell of claim 10, wherein the human sequence immunoglobulin polypeptide has the same sequence as an immunoglobulin polypeptide secreted by a hybridoma obtained from a transgenic mouse.

47. (NEW) The transformed cell of claim 46, wherein said transgenic mouse comprises a homozygous pair of functionally disrupted endogenous heavy chain alleles or a homozygous pair of functionally disrupted endogenous light chain alleles or a homozygous pair of functionally disrupted endogenous heavy and light chain alleles, and a human immunoglobulin light chain transgene, or a human heavy chain transgene, or a human immunoglobulin light chain transgene and heavy chain transgene.